

## Abstract

1       The present invention is an interface between a piece of  
2 baggage and a preconcentrator. The baggage-preconcentrator  
3 interface is able be secured to the opening in the baggage, such  
4 as an opening created by a zipper. The baggage-preconcentrator  
5 interface provides a convenient entry point from which to  
6 extract air from the interior of baggage. The shape of such  
7 interface corresponds to that of the preconcentrator, which  
8 collects constituents of air. The preconcentrator is inserted  
9 into the baggage-preconcentrator interface and an air sample is  
10 extracted from the interior of the baggage and through both the  
11 interface and the preconcentrator. As the air is extracted, the  
12 constituents of air collect in the preconcentrator. After  
13 collecting the constituents, the preconcentrator is inserted  
14 into a testing unit capable of detecting trace amounts of  
15 explosives, such as an ion trap mobility spectrometer. The  
16 testing unit analyzes the constituents and determines whether  
17 any of them are explosive.